Parent cognitive behavioral therapy (CBT) for children with anxiety
Children's Mental Health: Anxiety
Benefit-cost estimates updated December 2019. Literature review updated May 2018.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our Technical Documentation.

Program Description: Parent-only cognitive behavioral therapy (CBT) programs for children with anxiety teach parents how to use cognitive behavioral approaches with their anxious children. CBT uses cognitive restructuring and self-talk, exposure to feared stimuli, and other strategies to treat mental health conditions, including anxiety. Parent-only CBT interventions are typically delivered by therapists in individual or group format in an outpatient setting. In programs in this analysis, parents of 3- to 12-year-old children with anxiety disorders were expected to attend eight to ten weekly sessions, either individually or in groups. On average, families received seven therapeutic hours over two months.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$1,343		Benefit to cost ratio	n/a
Participants	$2,619		Benefits minus costs	$5,186
Others	$260		Chance the program will produce	
Indirect	$407		benefits greater than the costs	92 %
Total benefits	$4,629			
Net program cost	$557			
Benefits minus cost	$5,186			

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2018). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
K-12 grade repetition	$0	$6	$0	$3	$9
Labor market earnings associated with anxiety disorder	$2,548	$1,085	$0	$0	$3,633
Health care associated with anxiety disorder	$71	$252	$260	$126	$709
Adjustment for deadweight cost of program	$0	$0	$0	$278	$278
Totals	$2,619	$1,343	$260	$407	$4,629

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$475	2015	Present value of net program costs (in 2018 dollars)	$557
Comparison costs	$927	2010	Cost range (+ or -)	20 %

In studies included in this analysis, participants received an average of seven hours of therapist time. Per-participant cost estimates are based on weighted average therapist time, as reported in the treatment studies. Hourly therapist cost is based on the actuarial estimates of reimbursement by modality (Mercer. (2016). Mental health and substance use disorder services data book for the state of Washington). For comparison group costs, we use 2010 Washington State DSHS data to estimate the average reimbursement rate for anxiety treatment for children and adolescents.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant
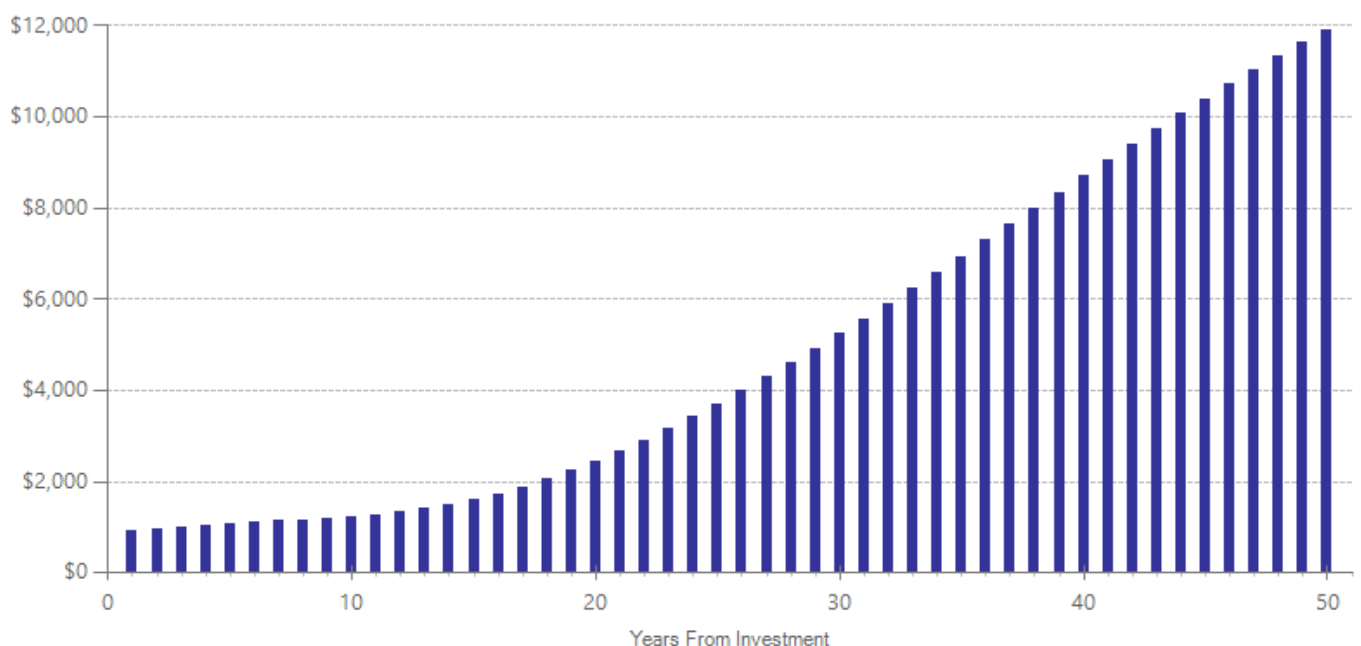
The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Treatment age	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Anxiety disorder	7	3	137	-0.476	0.199	7	-0.188	0.163	8	-0.796	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Kennedy, S. J., Rapee, R. M., & Edwards, S. L. (2009). A selective intervention program for inhibited preschool-aged children of parents with an anxiety disorder: Effects on current anxiety disorders and temperament. *Journal of the American Academy of Child & Adolescent Psychiatry, 48*(6), 602-609.

Thirlwall, K., Cooper, P.J., Karalus, J., Voysey, M., Willetts, L., & Creswell, C. (2013). Treatment of child anxiety disorders via guided parent-delivered cognitive-behavioural therapy: Randomised controlled trial. *The British Journal of Psychiatry, 203*(6), 436-444.

Waters, A.M., Ford, L.A., Wharton, T.A., & Cobham, V.E. (2009). Cognitive-behavioural therapy for young children with anxiety disorders: Comparison of a child + parent condition versus a parent only condition. *Behaviour Research and Therapy, 47*(8), 654-662.

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